

## IRAN

### The Bam Earthquake

The International Workshop on the Recovery of Bam's Cultural Heritage (17–20 April 2004, Bam, I.R. of Iran), co-organised by ICOMOS on the occasion of the International Day of Monuments and Sites (18 April 2004) adopted the following resolution in view of the devastating consequences of the earthquake on 26 December 2003:

#### The BAM Declaration and Recommendations

##### *Preamble*

The devastating earthquake of 26 December 2003 in the historic desert city of Bam, Islamic Republic of Iran, caused the tragic loss of many lives and the destruction of an overwhelming part of its cultural heritage. This natural disaster stirred a strong sense of solidarity in the international community for the people of Bam. This wish to aid was also particularly strong amongst institutions and professionals in the conservation of cultural heritage.

On the occasion of the International Day of Monuments and Sites (18 April), the Iranian Cultural Heritage Organization (ICHO), the United Nations Educational, Scientific, and Cultural Organization (UNESCO), and International Council of Monuments and Sites (ICOMOS) organized an International Workshop for the Recovery of Bam's Cultural Heritage between 17-20 April 2004 in Bam. 38 international and 23 Iranian expert participants and representatives of local and national authorities, and 31 ICHO members, gathered from Canada, France, Germany, Iran, Italy, Japan, Peru, Spain, the United Kingdom and the United States of America, as well as representatives of the Governments of France and Italy, International Centre for Earth Construction – Ecole d'Architecture de Grenoble – (CRATerre-EAG, France), the Getty Conservation Institute, World Monuments Fund, the International Centre for the Study of the Preservation and the Restoration of Cultural Property (ICCROM), ICOMOS, the World Bank, and UNESCO.

The workshop participants examined and reflected on the impact of the earthquake on Bam's heritage, notably Arg-e Bam and its related properties, the architecture and heritage assets which characterize this unique city, strategically located on the fringe of the desert;

***Drawing*** from lessons learnt from previous natural disasters which affected built heritage in urban settings, such as the 1995 Kobe earthquake in Japan, and various earthquakes in India, Morocco, Turkey, and countries in North and South America,

***Recognizing*** the universal nature of the ancient but still used earthen architecture as a living tradition adapted to desert environments, such as in Bam,

***Noting with concern*** that human and natural threats continue to endanger Bam's heritage and realising the need for both urgent and long-term preventive considerations, which demand full coordination between all stakeholders,

***Stressing*** the need to promote continued utilization of earth as a traditional building material for new constructions, thereby retain-

ing and expanding the specialist skills and employment opportunities,

***Emphasizing*** the fact that wisdom, knowledge and correct engineering principles must combine to create the required conditions for safe building, and it is not necessarily the implementation of material such as adobe which contributes to the failure of structures,

***Recognizing*** the heroic and successful efforts by the authorities and professionals of Iran, in particular, the Iranian Cultural Heritage Organization, to effectively respond to the post-earthquake emergency needs of Bam's cultural heritage,

***Noting*** that the crisis-response experience for Bam's cultural heritage could serve as a valuable and useful model at an international level after future disasters,

***Calling upon*** all national and international partners and stakeholders to actively participate in the recovery process of Bam,

***Recalling*** existing international conventions, recommendations, charters, and declarations favouring the integration of heritage conservation within the overall development process,

***Adopted the following Declaration and Recommendations***, for improved planning and conservation of Bam's heritage as an integral part of the recovery process and sustainable development process after the cataclysm, and called upon the Iranian authorities, ICOMOS and UNESCO to mobilize further co-operation at both national and international level to ensure that adequate steps are taken in the short, mid and long term, to provide further guidelines for preventive measures applicable to buildings, living settlements, archaeological sites of earthen architecture and cultural landscapes in Iran and around the world, and to encourage co-operation in the fields of research, education and training in relevant disciplines.

#### ***1. Conserving the full significance of Arg-e Bam and its setting***

- 1.1 Arg-e Bam, whose strategic location was chosen for agricultural, economic and defensive reasons, is the cultural and spiritual landmark of the city of Bam and a dominant feature of its landscape. It is also a highly significant and exceptional record of many archaeological layers and historical periods, representing the long and rich civilization of this city, contributed to the evolution of earthen architecture and cultural development.
- 1.2 The earthquake caused major structural damage to Arg-e Bam and affected the visual and functional nature of its relation to the city and its traditions. It also exposed some of the archaeological features. A full understanding of the impact of the earthquake from a conservation and archaeological point of view is necessary to provide a comprehensive basis for specific interventions either to conserve the site, or to re-establish some of its pre-earthquake condition in concurrence with international conventions and charters.
- 1.3 The exceptional work achieved since the day of the earth-

quake by ICHO has taken into account the complex character of Bam's heritage, including the spiritual role of Arg-e Bam and its related properties in the life of the citizens of Bam. In particular, the Workshop participants took note of the rapid establishment of the access path within Arg-e Bam, which was planned with care and sensitivity, and of the other related facilities and safety measures.

- 1.4 The conservation and protection of Arg-e Bam requires a balanced approach with reference to scientific and cultural data to understand its place in the living culture and its contribution to the specific identity of Bam and the nature of its archaeological site. In this sense, archaeological research work and conservation should be considered as concurrent and complementary activities to be carried out on the property.
- 1.5 The significance of Arg-e Bam and its related properties, and the consequences of the earthquake both call for the establishment of a permanent centre dedicated to research and conservation. The elaboration of long term conservation strategies and time-restricted comprehensive management plans will contribute to the protection of Arg-e Bam, which the Government of Iran is presently proposing to be recognized as World Heritage property.

## **2. *Conserving the character and the heritage of the city and landscape***

- 2.1. The diverse tangible and intangible heritage resources of Bam express values associated with the long and complex history of the city. The heritage of Bam and its surrounding area are a cultural landscape composed of the desert environment, ingenious water use, management and distribution systems, (e.g. Qanats), agricultural land use, gardens, and built environment.
- 2.2. In the urgent recovery process of Bam city, the cultural, social, economic, and physical aspects must be addressed simultaneously with the conservation of Arg-e Bam. The absence of detailed and in-depth studies of the various cultural, social-economic and physical aspects of the city should not prevent recovery actions from taking place. Nevertheless they should be planned and implemented in a sensitive manner, in constant consultation with the heritage managers. Meanwhile, mid to long term planning and implementation to conserve the heritage of Bam, its character and cultural landscape should be undertaken. As part of this effort, an inventory of buildings, building elements and landscape features, should be prepared. All these efforts will provide information to implement awareness and social programmes for the people of Bam, and develop their understanding and appreciation of their earthen heritage.
- 2.3. Recovery planning and implementation should both refer to and be the subject to an integrated documentation programme. Considering the diversity of Bam's heritage and the challenges to the revitalization of Bam's cultural landscape, the techniques and media used for documentation should be appropriate to the objectives of the specified tasks at hand. All information should be incorporated into the information system of the larger management plan.
- 2.4. The foundation of Bam's strong identity is composed of gardens and plantations, monuments of religious and civil uses, traditional houses, public facilities and water systems, and such features as the walls of different types of earth constructions, for example "chiné", and all the manifestations of

intangible heritage. The conservation, wherever possible, should be preferred and their reconstruction should be seen as a chance to perpetuate the living identity of Bam. Thus, through its urban landscape, there is an opportunity for real improvement in building technologies, and a reduction in vulnerability to natural forces, such as future earthquakes.

## **3. *Integrating heritage in the recovery process and the future development of Bam***

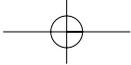
- 3.1. The conservation and revitalization of intangible and tangible heritage of Bam must be integrated within the General Master Plan which should be revised, as well as complementary support programmes and special projects contributing to the recovery process of post-earthquake Bam, in order to ensure that the unique identity and cultural character of Bam are retained and fully contribute to the restoration of the life of its citizens.
- 3.2. The cultural heritage, in particular the site of Arg-e Bam and the overall character of the city also constitute primary but non-renewable resources for the future social and economic development of the city, through tourism and other related activities. As such, their conservation and adequate management, including the perpetuation of skills and traditional know-how are to be considered as resources for the city's future development.
- 3.3. The recent development of tourism and its likely future expansion are not incompatible with the scientific and cultural objectives associated with the conservation and protection of Bam's cultural heritage and should be seen as complementary. While tourism infrastructures should be planned and developed so as to limit or eliminate their potentially negative visual or physical impacts on cultural heritage, the benefits of tourism should be shared with the local economy and contribute to the conservation of the cultural resources. Finally, the interpretation or presentation of the sites should include reference to the earthquake and its consequences for the local population.

## **4. *Preserving and enriching the tradition of earthen architecture***

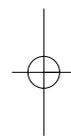
- 4.1. The impact of the earthquake on the built heritage of Bam and its infrastructures demonstrated that it was the lack of quality of construction and engineering of the buildings that was the main cause of damage rather than the construction materials themselves. This also demonstrates the need to document and understand building and material performance properly. This is particularly important in the development of seismic earthen architecture technology for future use in Bam and elsewhere in Iran.
- 4.2. It is important to upgrade the social image of vernacular architecture among the local people, without which this kind of architecture will be inevitably lost due to the loss of the relevant traditional skills and know-how.

## **5. *Protecting and preventing damage to earthen heritage in seismic areas***

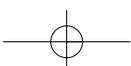
- 5.1. The collapse of structures and the debris resulting from earthquakes are serious risks to human life and to cultural heritage.



Bam before the earthquake



The Citadel at Bam after the earthquake



It is now recognized that protection against such cataclysms must be considered both for historic and contemporary structures. In light of this, it should be the practice in heritage environments to go beyond the confines of standard present-day engineering analysis and design techniques. This should include a full understanding and possible use of the earthquake performance characteristics of traditional anti-seismic construction practices of the regions and nations involved.

- 5.2. To facilitate the protection and prevention of damage to earthen heritage, it is essential to:
  - a. Increase understanding of the complete behaviour and performance of the earth material, structure, and construction in seismic areas;
  - b. Document the traditional cultures and architectures where earth is the principle building material, paying special attention to their specific responses and relationships to the needs of the inhabitants, and environments;
  - c. Document the different types of existing earthen materials and building systems, to understand and develop a glossary for the processes of decay;
  - d. Maintain and monitor all types of earthen structures;
  - e. Ensure that a full understanding and appreciation of earthen architecture, building materials and structures is integrated into the documentation used by all involved in conservation activities.

## **6. Sustaining co-operation to realize the conservation goals**

- 6.1. The diversity of cultural, scientific, educational and management issues of Bam and the effects of the earthquake call for sustained co-operation at different levels, the sharing of concerns and knowledge in order to increase the capacity required for the realisation of specific projects.
- 6.2. At the local level, the recovery of Bam's cultural heritage requires the development of an integrated approach that is transparent and open towards the population. Basing itself on information and the processes of education, consultation, and participation, this approach should take into account the perspective of the local population, acknowledging the specific responsibilities of the institutions and professionals entrusted with the care, maintenance and accessibility of Arg-e Bam and other elements of Bam's cultural heritage.
- 6.3. Co-operation among governmental and non-governmental institutions and associations, at the national and international levels is essential to carry on specific tasks, such as the development of a comprehensive information system. Moreover, an interdisciplinary approach is necessary to address the various scientific, educational and conservation needs of Bam's cultural heritage. The setting up of appropriate tools and mechanisms to facilitate and sustain such national and international co-operation is required and must be implemented.
- 6.4. Co-operation must be developed with other organizations, especially those usually involved in restoration, archaeology and conservation of heritage, as well as those working in the fields of urban planning, housing, tourism and funding activities.

## **7. Recommendations**

- 7.1. Recommendations for immediate action:
  - a. Document, identify and analyse initial risks and implement

emergency stabilisation treatments.

- b. Secure and stabilise the parts of Arg-e Bam which are vulnerable to aftershocks.
  - c. Provide adequate, sensitively designed and safe access to conservation professionals, the general public, and to the citizens of Bam who will continue to utilize the Arg-e Bam for traditional and religious activities.
- 7.2. Recommendations for short-term actions (2004–2005):
    - a. Define criteria and procedures for managing debris, taking into full consideration, on a case by case basis, the structural implications any interventions may cause on the heritage resources.
    - b. Continue with rigour the consultation process between ICHO and the relevant authorities in ensuring that the Master Plan for the Reconstruction of Bam City respects the heritage areas of Bam, as defined within the core and buffer zones, which are being proposed for World Heritage inscription. In addition, the panoramic views and cultural landscape surrounding Arg-e Bam and its related properties must be taken into account within the Master Plan.
    - c. Strengthen and continue the comprehensive management planning process in a short to medium time frame, for Arg-e Bam and its surrounding areas.
    - d. Develop plans for visitor access and orientation, including exhibition of pre and post-earthquake events and heritage assets.

- 7.3. Recommendations for mid-term actions (2004–2010):
  - a. Develop and implement a site management plan for Arg-e Bam and its surrounding areas. The plan must address and establish policies for conservation, archaeological researches, rehabilitation, cultural landscape protection, site interpretation, access, circulation and safety. Furthermore, the plan should guarantee compatibility with the General Master Plan being developed for Bam's reconstruction.
  - b. Develop a conservation programme, which includes a comprehensive analysis resulting in interventions based on the identification of the complete range of values in accordance with international charters.
  - c. Implement an open information management system to ensure access to information and to prevent wastes of effort. To this end, standard criteria for data collection, classification and entry must be established. These standards must take into consideration the needs of multiple disciplines.

- 7.4. Recommendations for long-term actions (2004–2015):
  - a. Assess the objectives of the site management plan of Arg-e Bam, the effectiveness of the policies within the management plan, and the compatibility with the expected outcomes from the General Master Plan.
  - b. Conduct scientific investigations to address issues related to the long term conservation of earthen architecture in Arg-e Bam. This could contribute, in a broader national and international context, to the development of adapted use of earthen architecture techniques for seismic areas and for contemporary needs.

## **8. Sustaining the momentum and focus to implement the present Declaration and Recommendations**

- 8.1. Establish a permanent research centre for Arg-e Bam in particular, and on earthen architecture in general, which may also



Bam, damages caused by the earthquake

promote the use of Arg-e Bam as a training and research centre of national significance.

8.2. To provide Bam and its heritage with the necessary support, the participants agreed that it would be essential for ICHO, ICOMOS and UNESCO to continue their co-operation to ensure the results of this workshop are effectively responded to. The documentation resources drawn from the information management system of Bam's heritage should comprise the foundation for sustainable conservation work. Special attention to the development of user interface design appropriate to professional communities, public outreach programmes, and pedagogical usage should be given priority. The appropriate cultural contexts and technological infrastructures can be instrumental in the dissemination strategies in this stage of implementation.

8.3. The urgent creation of a fund by UNESCO for streamlining assistance to Bam's heritage was recommended.

Finally, the participants of the Workshop expressed their deep appreciation to the Iranian Cultural Heritage Organization and the Iranian authorities, ICOMOS and UNESCO for jointly hosting and organizing this timely and important Workshop. Furthermore, gratitude was expressed to the Government of Japan, UNESCO and its World Heritage Committee, and the World Bank, for their generous technical and financial assistance to realize this Workshop, and to the Governments of Canada, France and Italy, the Getty Conservation Institute, and the World Monuments Fund for their technical co-operation.

Adopted in Bam, Iran, on 20 April 2004

## A series of new dams is submerging archaeological sites throughout Iran

### Ambitious hydro-electric programme is pushed ahead regardless of heritage fears

*Iran's cultural heritage is facing almost unquantifiable damage from an ambitious programme of dam building. There are currently 85 dams under construction across the country, part of a programme that the Iranian government promotes with a considerable amount of national pride. It is an understandable concern in a dry country, parts of which are recovering from a seven-year drought. The dams are also connected to a programme of hydro-electric production that is seen as an essential part of a process of modernisation and industrialisation regularly highlighted by government issued targets and figures. By March of this year, hydro-electric power is expected to produce around 5,500 megawatts of electricity, rising to 14,000 megawatts by 2021, representing 20% of Iran's total usage.*

*In its desperate attempts to mount salvage operations, the Iran Cultural Heritage Organisation (ICHTO) has found itself not only obstructed by the Energy Ministry, but close to being in open opposition to the government. With little time remaining to survey the sites under threat, it is possible that the true extent of what will be submerged beneath the waters of these reservoirs will never be known, a potential cultural tragedy in a country often referred to as the cradle of civilisation.*

*At least five dams, all in advanced stages of construction, have been identified as threatening sites of particular importance. On 8 November, the waters began rising in the reservoir behind the biggest and most advanced of these projects, the Karun-3 Dam, on the Karun River, around 28 kilometres east of the ruins of the ancient city of Izeh. In a clear display of dissent, ICHTO officials refused to attend the opening ceremony attended by Energy Minister Habibollah Bitaraf. By 14 November, the historic Shalu Bridge, Iran's first suspension bridge, had already been submerged.*

*Of greater significance are the early archaeological sites in the area. In late September, a desperate plea for assistance was posted on the internet by A. Dashizadeh, an Iranian archaeologist directing an ICHTO salvage team, which was given a single month to survey the 50 kilometre-long river valley by Ab-Niroo, the company responsible for building the dam. Mr Dashizadeh said that the team had already located 18 sites from the Epipaleolithic period (20,000-10,000 BC), including 13 caves and four rockshelters. The river valley is also rich in rock-carved reliefs, graves, ancient caves and other remains from the Elamite era (2700BC- 645BC) many of which are now underwater.*

*At the time of writing archaeological salvage operations were continuing around the clock, with four to six months remaining before the water rises to its maximum level. However, Mahmud Mireskandari of the ICHTO's underwater archaeology team said that his team possesses neither the equipment nor the expertise necessary to save these sites, and without foreign assistance they will be lost. This assistance has yet to materialise and Faramarz Khoshab, president of Izeh's Cultural Heritage Association says that looting is already a problem.*

*US archaeologist Dr Henry Wright of the Museum of Anthropology at the University of Michigan, who surveyed the Karun river area in 1973, told The Art Newspaper that in addition to the early archaeological sites, other significant losses could include castles or qaleh from the Islamic period as well as extraordinary late Islamic cemeteries. „To see this happening breaks my heart,“ he said.*

*By far the most famous site under threat is Pasargadae, ancient capital of the Achaemenids in the sixth century BC and residence of Cyrus the Great, which was registered on Unesco's World Heritage List last July. Situated in Fars province, it is only four kilometres away from the Teng-e Bolaghi gorge, once part of the renowned Imperial route to Persepolis and Susa, which will be flooded by the Polvar River when the Sivand Dam is completed in March 2005. Part of the ancient city will be buried under mud, and even the mausoleum of Cyrus the Great is believed to be at risk. Beginning in January 2005, a salvage team consisting of French, German, Italian, Japanese and Polish archaeologists will collaborate with their Iranian counterparts in a joint operation to save an estimated 100 archaeological sites in the area.*

*Another major project, the Sarhand Dam near Hashtrud in East Azerbaijan Province, which will also become operational next year, threatens at least 10 important archaeological sites and substantial archaeological losses are also expected in Gilan Province.*

*This potential archaeological tragedy has received little media coverage in the west, and many of the areas have never been properly surveyed. What has emerged thus far may just be the tip of the iceberg, and in the process of attempting to transform itself into a modern industrial state, Iran seems set to obliterate a significant part of its cultural heritage.*

Lucian Harris in *The Art Newspaper* (20 December 2004)